

AMENDMENTS TO THE CLAIMS

Applicants have canceled Claim 1-6 and 21-34 and amended claims 7 and 35 as follows.

The listing of the claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (canceled)

2. (canceled)

3. (canceled)

4. (canceled)

5. (canceled)

6. (canceled)

7. (currently amended): A method for vaporizing a liquid or solid sample for analysis, comprising:

a) providing a micropyrolyzer, comprising:

a substrate having a suspended membrane formed thereon, the membrane having a surface for accepting the sample, wherein the substrate is selected from the group consisting of semiconductors and dielectrics; and

a resistive heating element disposed on the membrane;

ba) depositing the sample on the sample-accepting surface of the membrane;

c) introducing a reagent chemical to the sample;

db) heating the sample on the membrane with the resistive heating element to form a vapor; and

ee) removing the vapor from the micropyrolyzer for chemical analysis of the vapor.

8. (canceled)

9. (original): The method of claim 7, wherein the sample size is less than 3 microliters.
10. (original): The method of claim 7, wherein the sample heating rate is greater than 20°C per millisecond.
11. (original): The method of claim 7, wherein the sample heating rate is greater than 40°C per millisecond.
12. (original): The method of claim 7, wherein the sample heating rate is greater than 60°C per millisecond.
13. (original): The method of claim 7, wherein the sample can be heated to a temperature of up to 1000°C.
14. (original): The method of claim 7, wherein the heating requires less than 1 Watt of power.
15. (original): The method of claim 7, wherein the sample comprises a fatty ester, triglyceride, wax, oil, polyunsaturated fat, fatty alcohol, phenol, dipicolinic acid, carboxylic acid-containing molecule, alkaloidal narcotic, drug, drug metabolite, or herbicide.
16. (original): The method of claim 7, wherein the sample comprises a fatty acid or a mixture containing fatty acids.
17. (original): The method of claim 78, wherein the reagent chemical comprises a methylation reagent.
18. (original): The method of claim 17, wherein the reagent chemical comprises tetramethylammonium acetate, trimethylphenylammonium hydroxide, phenyl-trimethylammonium fluoride, N,N-Dimethylformamide dimethyl acetal, or (m-trifluoro-methylphenyl) trimethylammonium hydroxide.
19. (original): The method of claim 17, wherein the reagent chemical comprises tetramethylammonium hydroxide.
20. (canceled)
21. (canceled)

- 22. (canceled)
- 23. (canceled)
- 24. (canceled)
- 25. (canceled)
- 26. (canceled)
- 27. (canceled)
- 28. (canceled)
- 29. (canceled)
- 30. (canceled)
- 31. (canceled)
- 32. (canceled)
- 33. (canceled)
- 34. (canceled)
- 35. (previously presented): The method of claim 7 wherein the substrate comprises silicon.
- 36. (previously presented): The method of claim 7, wherein the membrane comprises a material selected from the group consisting of silicon nitride, polysilicon, silicon oxynitride and silicon carbide.
- 37. (previously presented): The method of claim 7, wherein the resistive heating element comprises a circuitous metal trace.
- 38. (previously presented): The method of claim 37, wherein the metal comprises a metal selected from the group consisting of platinum, molybdenum, titanium, chromium, palladium, gold, tungsten, and combinations thereof.